

REPORT:

PROCEEDINGS OF THE CONFERENCE ON RAPTOR CONSERVATION
TECHNIQUES, FORT COLLINS, COLORADO, 22-24 MARCH, 1973

Part 2. RAPTOR ECOLOGY SESSION

edited by
Byron E. Harrell

The opening session of the Conference on Thursday morning, 22 March, 1973 consisted of seven papers and was chaired by Dr. Gustav Swanson. An eighth paper in this area was inadvertently omitted from the program and was given the following day. Five of the eight papers were completed for publication in this issue of *Raptor Research*. Abstracts of the other papers are included below. The following papers on Raptor Ecology were presented.

1. *Gessaman, James A.*, Dept. of Zoology, Utah State University, Logan, Utah 84322.

Is Heart Rate a Good Measure of the Energy Metabolism of Semi-free-living Kestrel?

ABSTRACT. The ECG of Kestrels (*Falco sparverius*) was transmitted by telemetry to a receiver at distances of up to 250 feet. Two electrodes were surgically implanted in each bird and connected to an ECG transmitter harnessed on the bird's back. Carbon dioxide production and heart rate (measured by counting the R spikes on the ECG) of Kestrels resting in a small chamber at 10 different temperatures and of Kestrels during flight in a wind tunnel were measured. Subsequently the birds were released inside a large quonset building, and their heart rates were monitored for five seconds of every minute during each 24-hour period. Total daily CO₂ production of each of six birds was estimated for four days from the heart rate of each in conjunction with a CO₂-heart rate regression for each individual. Total daily CO₂ production was simultaneously estimated by a totally independent technique, the doubly-labeled water (D₂O + H₂¹⁸O) method. A comparison of the results of these two methods suggests that the total daily CO₂ production of a Kestrel can be estimated from its heart rate with an error of less than 25%.

2. *Mosher, J. A.*, 1160 E. 230 S., Provo, Utah 84601.
The Energetics of Size-dimorphism.

ABSTRACT. The relationship between size-dimorphism and energetics of the Broad-winged Hawk was examined. The resting metabolic rate (RMR) of three